

OIPe

## RAW SEQUENCE LISTING

DATE: 06/16/2000

PATENT APPLICATION: US/09/589,870

TIME: 11:34:25

Input Set : A:\547.app

Output Set : N:\CRF3\06162000\I589870.raw

ENTERED

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4 <110> APPLICANT: Goshorn, Stephen C.
5 Graves, Scott Stoll
6 Schultz, Joanne Elaine
7 Lin, Yakankg
8 Sanderson, James A.
9 Reno, Jonh M.
11 <120> TITLE OF INVENTION: STREPTAVIDIN EXPRESSED GENE FUSIONS AND
12 METHODS OF USE THEREOF
15 <130> FILE REFERENCE: 690022.547
C--> 17 <140> CURRENT APPLICATION NUMBER: US/09/589,870
18 <141> CURRENT FILING DATE: 2000-06-05
20 <160> NUMBER OF SEQ ID NOS: 46
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25 <211> LENGTH: 638
26 <212> TYPE: DNA
27 <213> ORGANISM: Streptomyces avidinii
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31 cgctcgttgca gccatcgccg ttteccctgac cacgggtctcg attacggcca gcgcttcggc      120
32 agaccctctcc aaggactcga agggcccaggt ctcggccgccc gaggccggca tcaccggcac      180
33 ctggtacaac cagctcggtc cgaccttcac cgtgaccgcg ggcgcccagc gcgccttgac      240
34 cggaaacctac gagtcggccg tcggcaacgc cgagagccgc tacgtcctga ccggtcgtta      300
35 cgacagcgcc ccggccaccg acggcagcgg caccgcccctc ggttggaagg tggcctggaa      360
36 gaataactac cgcaacgccc actccgcgac cacgtggagc ggccagtacg tcggcggcgc      420
37 cgaggcgagg atcaacaccc agtggctgct gacctccggc accaccgagg ccaacgcctg      480
38 gaagtccacg ctggtcggcc acgacacctt caccaagggt aagccgtccg ccgcctccat      540
39 cgacgcggcg aagaaggccg gcgtcaacaa cggaacccc ctcgacgccc ttcagcagta      600
40 gtcgcgtccc ggcaccggcg ggtgcccggg cctcggcc                                638
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43 <211> LENGTH: 183
44 <212> TYPE: PRT
45 <213> ORGANISM: Streptomyces avidinii
47 <400> SEQUENCE: 2
48 Met Arg Lys Ile Val Val Ala Ala Ile Ala Val Ser Leu Thr Thr Val
49 1 5 10 15
50 Ser Ile Thr Ala Ser Ala Ser Ala Asp Pro Ser Lys Asp Ser Lys Ala
51 20 25 30
52 Gln Val Ser Ala Ala Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln
53 35 40 45
54 Leu Gly Ser Thr Phe Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr
55 50 55 60
56 Gly Thr Tyr Glu Ser Ala Val Gly Asn Ala Glu Ser Arg Tyr Val Leu
57 65 70 75 80
58 Thr Gly Arg Tyr Asp Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala
59 85 90 95
60 Leu Gly Trp Thr Val Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser

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61          100          105          110
62 Ala Thr Thr Trp Ser Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile
63          115          120          125
64 Asn Thr Gln Trp Leu Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp
65          130          135          140
66 Lys Ser Thr Leu Val Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser
67 145          150          155          160
68 Ala Ala Ser Ile Asp Ala Ala Lys Lys Ala Gly Val Asn Asn Gly Asn
69          165          170          175
70 Pro Leu Asp Ala Val Gln Gln
71          180
73 <210> SEQ ID NO: 3
74 <211> LENGTH: 1612
75 <212> TYPE: DNA
76 <213> ORGANISM: Streptomyces avidinii
78 <400> SEQUENCE: 3
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80 atgttgttga gaacctcccg atggctagta cgatttacac cgaacatgtg cccttggcaa        120
81 ccatcgaccc ggacctcgac catccagttc tgccgcaaaa gacacatgcc gcaactgtgt        180
82 ttgttcaccg acaccgtcag gtgcacggcc gaggtcacia accttgacgg gcgggatacg        240
83 gacggcgcac gccacagcgc gccctccgtc cccgccgggc aacaactagg gagtattttt        300
84 cgtgtctcac atgcgcaaga tcgtcgttgc agccatcgcc gtttccctga ccacggctctc        360
85 gattacggcc atggctgaca tccagatgac tcagtctcca tcgtccttgt ctgcctctgt        420
86 gggagacaga gtcacgatca cttgtcgggc tagtcagggc attagaggta atttagactg        480
87 gtatcagcag aaacctggta agggaccgaa actcctaate tactccacat ccaattttaa        540
88 ttctgtgtgc ccatcaaggt tcagtggcag tgggtctggg tcagattata ctctcaccat        600
89 cagcagcctt cagcctgaag atttcgcaac gtattactgt ctacagcgta atgcgtatcc        660
90 gtacacgttc ggacaaggga ccaagctgga gatcaagatc tctggtggcg gtggctcggg        720
91 cgggtgtggg tcgggtggcg gaggtcagag ccagggtcag ctggtccagt ctggggcaga        780
92 ggtgaaaaag ccaggggcct cagtcaaggt gtcctgcaag gcttctggct tcaacattaa        840
93 agacacctat atgcaactgg tgaggcaggc acctggacag ggcctgcagt ggaagggaag        900
94 gattgatcct gcgaatggta atactaaatc cgacctgtcc ttccagggca gggtagactat        960
95 aacagcagac acgtccatca acacagccta catggaactc agcagcctga ggtctgacga        1020
96 cactgcccgc tattactgtt ctagagaggt ctaactggg acgtggtctt tggactactg        1080
97 gggtaaggga accttagtca ccgtgagctc tggctctggt tcggcagacc cctccaagga        1140
98 ctcgaaaggc cagggtctcg ccgcccaggc cggcacacc gccacctggt acaaccagct        1200
99 cggctcgacc ttcatcgtga ccgcccggcg cgacggcgcc ctgaccggaa cctacgagtc        1260
100 ggccgtcggc aacgcccaga gccgctacgt cctgaccggt cgttacgaca gcgccccggc        1320
101 caccgacggc agcggcaccg cctcgggttg gacggtggcc tggagaata actaccgcaa        1380
102 cgccactcc gcgaccacgt ggagcgcca gtacgtcggc ggcgcccagg cgaggatcaa        1440
103 caccagtggt ctgctgacct ccggcaccac cgaggccaac gcctggaagt ccacgctggt        1500
104 cggccacgac accttaccga aggtgaagcc gtccgcccgc tccatcgacg cggcgaagaa        1560
105 ggccggcgct aacaacggca acccgctcga cgccgttcag cagtaaggat cc        1612
107 <210> SEQ ID NO: 4
108 <211> LENGTH: 431
109 <212> TYPE: PRT
110 <213> ORGANISM: Streptomyces avidinii
112 <400> SEQUENCE: 4
113 Met Arg Lys Ile Val Val Ala Ala Ile Ala Val Ser Leu Thr Thr Val

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114	1				5					10					15	
115	Ser	Ile	Thr	Ala	Met	Ala	Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser
116				20					25					30		
117	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser
118			35					40					45			
119	Gln	Gly	Ile	Arg	Gly	Asn	Leu	Asp	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys
120		50					55					60				
121	Gly	Pro	Lys	Leu	Leu	Ile	Tyr	Ser	Thr	Ser	Asn	Leu	Asn	Ser	Gly	Val
122	65					70					75				80	
123	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Ser	Asp	Tyr	Thr	Leu	Thr
124				85					90					95		
125	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln
126				100					105					110		
127	Arg	Asn	Ala	Tyr	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile
128			115					120					125			
129	Lys	Ile	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly
130		130					135					140				
131	Gly	Ser	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys
132	145				150						155				160	
133	Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Phe	Asn	Ile
134				165						170					175	
135	Lys	Asp	Thr	Tyr	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu
136				180					185					190		
137	Gln	Trp	Met	Gly	Arg	Ile	Asp	Pro	Ala	Asn	Gly	Asn	Thr	Lys	Ser	Asp
138			195					200					205			
139	Leu	Ser	Phe	Gln	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Ile	Asn
140		210				215						220				
141	Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Asp	Asp	Thr	Ala	Val
142	225					230					235				240	
143	Tyr	Tyr	Cys	Ser	Arg	Glu	Val	Leu	Thr	Gly	Thr	Trp	Ser	Leu	Asp	Tyr
144				245						250				255		
145	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Ser	Gly	Ser	Ala
146				260					265					270		
147	Asp	Pro	Ser	Lys	Asp	Ser	Lys	Ala	Gln	Val	Ser	Ala	Ala	Glu	Ala	Gly
148			275					280					285			
149	Ile	Thr	Gly	Thr	Trp	Tyr	Asn	Gln	Leu	Gly	Ser	Thr	Phe	Ile	Val	Thr
150		290					295					300				
151	Ala	Gly	Ala	Asp	Gly	Ala	Leu	Thr	Gly	Thr	Tyr	Glu	Ser	Ala	Val	Gly
152	305					310					315				320	
153	Asn	Ala	Glu	Ser	Arg	Tyr	Val	Leu	Thr	Gly	Arg	Tyr	Asp	Ser	Ala	Pro
154				325						330					335	
155	Ala	Thr	Asp	Gly	Ser	Gly	Thr	Ala	Leu	Gly	Trp	Thr	Val	Ala	Trp	Lys
156			340						345					350		
157	Asn	Asn	Tyr	Arg	Asn	Ala	His	Ser	Ala	Thr	Thr	Trp	Ser	Gly	Gln	Tyr
158			355					360					365			
159	Val	Gly	Gly	Ala	Glu	Ala	Arg	Ile	Asn	Thr	Gln	Trp	Leu	Leu	Thr	Ser
160		370					375					380				
161	Gly	Thr	Thr	Glu	Ala	Asn	Ala	Trp	Lys	Ser	Thr	Leu	Val	Gly	His	Asp
162	385					390					395				400	

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163 Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
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166                               420          425          430
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169 <211> LENGTH: 1239
170 <212> TYPE: DNA
171 <213> ORGANISM: Streptomyces avidinii
173 <400> SEQUENCE: 5
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175 atgacttgca gggccagctc aagtgttaagt tacatgcact ggtaccagca gaagccagga      120
176 tcctccccc aacctggat ttatgccaca tccaacctgg ctctctggagt ccctgctcgc      180
177 ttcagtggca gtgggtctgg gacctcttac tctctcacia tcagcagagt ggaggctgaa      240
178 gatgctgcca cttattactg ccagcagtggt attagtaacc caccacggtt cgggtgctggg      300
179 accaagctgg agctgaagat ctctggtctg gaagcgagcc cgggaagcagg tctgtctccg      360
180 gacgcaggtt ccggtctcag ccaggttcag ctggtccagt caggggctga gctggtgaag      420
181 cctggggcct cagtgaagat gtcttgcaag gcttctggct acacatttac cagttacaat      480
182 atgcactggg taaagcagac acctggacag ggcctggaat ggattggagc tattatcca      540
183 ggaaatgggt ataacttcta caatcagaag ttcaaaggca aggccacatt gactgcagac      600
184 aaatcctcca gcacagccta catgcagctc agcagcctga catctgagga ctctgcggtc      660
185 tattactgtg caagagcgca attacgacct aactactggt acttcgatgt ctggggcgca      720
186 gggaccacgg tcacctgtgag ctctggctct gggtcggcag accctccaa ggactcgaag      780
187 gcccaggtct cggccgcgca ggcgggcac accggcacct ggtacaacca gctcggctcg      840
188 accttcacgt tgaccgcggg cgccgacggc gccctgaccg gaacctacga gtcggccgctc      900
189 ggcaacgccc agagccgcta cgtcctgacc ggtcgttacg acagcgcccc ggccaccgac      960
190 ggcagcggca ccgccctcgg ttggacggtg gcctggaaga ataactaccg caacgcccac      1020
191 tccgcgacca cgtggagcgg ccagtacgct ggcggcgcgg aggcgaggat caacaccag      1080
192 tggctgctga cctccggcac caccgagccc aacgcctgga agtccacgct ggtcggccac      1140
193 gacaccttca ccaaggtgaa gccgtccgcc gcctccatcg acgcgcgcaa gaaggccggc      1200
194 gtcaacaacg gcaacccgct cgacgccgtt cagcagtaa      1239
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197 <211> LENGTH: 412
198 <212> TYPE: PRT
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203 1 5 10 15
204 Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Tyr Met
205 20 25 30
206 His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
207 35 40 45
208 Ala Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
209 50 55 60
210 Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Val Glu Ala Glu
211 65 70 75 80
212 Asp Ala Ala Thr Tyr Cys Gln Gln Trp Ile Ser Asn Pro Pro Thr
213 85 90 95
214 Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Ile Ser Gly Leu Glu Gly
215 100 105 110

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216 Ser Pro Glu Ala Gly Leu Ser Pro Asp Ala Gly Ser Gly Ser Ser Gln
217      115      120      125
218 Val Gln Leu Val Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser
219      130      135      140
220 Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Asn
221 145      150      155      160
222 Met His Trp Val Lys Gln Thr Pro Gly Gln Gly Leu Glu Trp Ile Gly
223      165      170      175
224 Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe Lys
225      180      185      190
226 Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
227      195      200      205
228 Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala
229      210      215      220
230 Arg Ala Gln Leu Arg Pro Asn Tyr Trp Tyr Phe Asp Val Trp Gly Ala
231 225      230      235      240
232 Gly Thr Thr Val Thr Val Ser Ser Gly Ser Gly Ser Ala Asp Pro Ser
233      245      250      255
234 Lys Asp Ser Lys Ala Gln Val Ser Ala Ala Glu Ala Gly Ile Thr Gly
235      260      265      270
236 Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe Ile Val Thr Ala Gly Ala
237      275      280      285
238 Asp Gly Ala Leu Thr Gly Thr Tyr Glu Ser Ala Val Gly Asn Ala Glu
239      290      295      300
240 Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp Ser Ala Pro Ala Thr Asp
241 305      310      315      320
242 Gly Ser Gly Thr Ala Leu Gly Trp Thr Val Ala Trp Lys Asn Asn Tyr
243      325      330      335
244 Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr Val Gly Gly
245      340      345      350
246 Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu Leu Thr Ser Gly Thr Thr
247      355      360      365
248 Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp Thr Phe Thr
249      370      375      380
250 Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys Lys Ala Gly
251 385      390      395      400
252 Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
253      405      410
255 <210> SEQ ID NO: 7
256 <211> LENGTH: 1280
257 <212> TYPE: DNA
258 <213> ORGANISM: Streptomyces avidinii
260 <400> SEQUENCE: 7
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262 tgaagatgtc ctgcaaggct tctggctaca catttaccag ttacaatatg cactgggtaa      120
263 agcagacacc tggacagggc ctggaatgga ttggagctat ttatccagga aatgggtgata      180
264 cttcctacaa tcagaagttc aaaggcaagg ccacattgac tgcagacaaa tcctccagca      240
265 cagcctacat gcagctcagc agcctgacat ctgaggactc tgcggtctat tactgtgcaa      300
266 gagcgcaatt acgacctaac tactggtact tcgatgtctg gggcgagggg accacggtca      360

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/589,870

DATE: 06/16/2000

TIME: 11:34:26

Input Set : A:\547.app

Output Set: N:\CRF3\06162000\I589870.raw

L:17 M:270 C: Current Application Number differs, Wrong Format